Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matters of	)	
	)	
Rulemaking to Amend Part 1 and Part 21	)	CC Docket No. 92-297
of the Commission's Rules to Redesignate	)	
the 27.5 - 29.5 GHz Frequency Band and	)	RM-7872; RM-7722
to Establish Rules and Policies for	)	
Local Multipoint Distribution Service	)	

COMMENTS OF CALLING COMMUNICATIONS CORPORATION

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SUMMARY

The FCC must not move forward and authorize a new local multipoint distribution service ("LMDS") without assuring that there is adequate need for the service, the 28 GHz band is the

country, the regulatory structure proposed in the Notice would preclude most future satellite uses of the 27.5-29.5 GHz band, and would have the practical effect of relegating FSS in this band to "secondary" status to LMDS.

The Commission must guard against taking any action that fails to protect the co-primary status of FSS in the 27.5-29.5 GHz frequencies. Given that proposed LMDS's multicell multipoint operations will foreclose acceptable sharing with most FSS uses on the same frequencies, as a new service that does not readily lend itself to sharing with the co-primary allocation of FSS, LMDS systems should be authorized in the 28 GHz band only on a secondary basis to FSS.

Alternatively, if the Commission elects not to make LMDS secondary to FSS, it should set aside sufficient spectrum in the 27.5-29.5 GHz frequencies for FSS uses that are incompatible with LMDS systems. It appears that 1000 MHz is an appropriate amount of spectrum for such purposes. The Commission could for example assign two 500 MHz blocks to LMDS which would allow two 25 channel systems in each market; with existing video compression technology, the number of channels could be increased well beyond the number of channels envisioned in the Notice. FSS system operations that are capable of co-existing with LMDS would also be eligible to apply to use LMDS frequencies for earth-to-satellite transmissions. The remaining 1000 MHz in the 27.5-29.5 GHz band would be reserved exclusively for FSS uses that are incompatible with LMDS operations.

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COMMENTS OF CALLING COMMUNICATIONS CORPORATION

Calling Communications Corporation ("Calling"), by its attorneys, submits these Comments in response to the Notice of Proposed Rulemaking ("Notice") issued by the Federal Communications Commission ("FCC" or "Commission") in the above-captioned proceeding.1/ In its Notice, the Commission proposes to establish a new local multipoint distribution service ("LMDS") in the 27.5-29.5 GHz frequency range for the provision of video and other communications services by redesignating the use of 2 GHz of spectrum from the point-to-point microwave service to the new LMDS.2/ As set forth more fully below, Calling is planning to apply for authority for a low earth orbit ("LEO") satellite system that will operate in part of this frequency band. Calling is concerned that the proposed LMDS will have an adverse affect on the operation of its proposed LEO satellite system and other satellite systems proposing to operate in the frequencies

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1/ Notice of Proposed Rulemaking, Order, Tentative Decision and Order on Reconsideration, (FCC 92-538) ___ FCC Rcd _____ (released January 8, 1993).

2/ The Commission defines the 27.5-29.5 GHz frequencies as the "28 GHz band." See Notice at ¶2.

proposed to be reallocated to LMDS. Accordingly, Calling urges the Commission to proceed with caution in this proceeding to assure that authorization of the proposed LMDS does not have the effect of foreclosing the use of the 27.5-29.5 GHz frequencies in the satellite services.

I. INTRODUCTION.

Calling was established in 1990 with the goal of determining the technical and economic feasibility of developing, constructing, launching, and operating a truly global satellite-based telephone system that would meet the tremendous unmet global need for basic telephone services. Since that time, Calling has invested considerable time and resources towards the design and development of a LEO satellite system that will achieve this goal. Calling expects to file its application soon with the Commission for authority for its LEO satellite system.

Calling's satellite system will provide fixed satellite services ("FSS") to multiple fixed terminal end users. Calling's fixed terminal to satellite links will operate in the 27.5-29.5 GHz band and its gateway uplinks also will operate in this frequency band. Because the proposed LMDS frequency redesignation encompasses eighty percent (80%) of the total FSS uplink frequencies in the Ka-band and one hundred percent (100%) of the total FSS uplink Ka-band frequencies where FSS is not co-primary to mobile satellite service ("MSS"), Calling is vitally concerned that the operation of the proposed LMDS could have the

effect of foreclosing the future use of the Ka-band for the provision of FSS.3/

Calling urges the Commission to proceed with caution in the instant proceeding so as to guard against such an adverse and unacceptable outcome.4/ The FCC must not move forward and authorize LMDS without assuring that there is adequate need for the service, the 28 GHz band is the optimum spectrum for such service, and that current and future FSS uses in these frequencies will not be impeded.

II. IT IS NOT CLEAR THAT LMDS AND FSS CAN CO-EXIST ON A CO-PRIMARY BASIS GIVEN THE MULTICELL-MULTIPOINT CONFIGURATION OF LMDS.

The Commission requests comment on whether a separate assignment of frequencies is required to accommodate proposed satellite services in the 28 GHz band or whether adequate coordination and sharing criteria can be developed to permit both terrestrial and fixed satellite services to operate compatibly in

proposed LMDS service envision a wide area of distribution of services that may foreclose the possibility of acceptable sharing conditions between satellite and terrestrial services. Id.

Calling shares the Commission's concerns that the nature of LMDS may foreclose acceptable sharing conditions between FSS and LMDS. Calling believes that LMDS subscriber receivers and multiple FSS terminals operating on the same frequencies in the same geographic area cannot be satisfactorily coordinated.5/ The Commission's traditional approach to sharing between FSS earth stations and receivers in terrestrial fixed services operating in the same frequencies has been to impose strict equivalent isotropic radiated power ("EIRP") limits on transmitters in both services in combination with coordination requirements with respect to the location of the FSS earth stations and the receivers and transmitters in the terrestrial fixed services. See 47 C.F.R. §§ 21.107(b), 21.108, 25.204(b) (1992). EIRP limits on the transmissions of satellite earth stations in combination with the coordination requirement has provided adequate protection to traditional fixed terrestrial

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5/ Since FSS operations in the 28 GHz band are limited to earth-to-satellite transmissions, there is no possibility of interference from satellites into terrestrial LMDS receivers. Similarly, for the same reasons, there are no concerns regarding interference from LMDS transmitters into FSS earth station receivers. Lastly, with respect to potential harmful interference to satellite receivers from LMDS transmitters, given the significant distance between LMDS transmitters and receivers aboard satellites, equivalent isotropic radiated power ("EIRP") limits on LMDS transmissions should provide adequate protection to satellites from potentially harmful interference. See infra at 9-10.

receivers, such as those in the point-to-point microwave service. Similarly, EIRP limits on transmitters in the terrestrial fixed services have in the past provided adequate protection to satellite earth station receivers.

As indicated above, in addition to meeting the EIRP limits, satellite systems are required to coordinate the physical location of earth stations with the location of existing terrestrial receivers to avoid harmful interference. The coordination criteria for satellite earth stations are set forth in Sections 25.251, 25.252 and 25.253 of the Commission's rules. See 47 C.F.R. §§25.251, 25.252, 25.253. With respect to the point-to-point microwave service, coordination with existing terrestrial receivers can normally be accomplished because the limited number of such receivers enables transmitting satellite earth stations to be located at sites with sufficient physical separation from terrestrial receivers so as to avoid potentially harmful interference from such earth stations into terrestrial receivers.

Under the Commission's coordination rules, a LMDS receiver and a Calling fixed satellite terminal must be separated by a minimum distance of approximately ten kilometers. Because LMDS will have multicell multipoint configurations throughout a its service area, the coordination of the physical locations of multiple fixed satellite terminals and LMDS receivers operating in the same frequencies, as a practical matter, will be

impossible.6/ Given the multitude of LMDS subscriber receivers in a particular service area, there simply will not be sufficient distances between LMDS receivers and FSS systems to coordinate the location of fixed satellite terminals (operating on a LMDS frequency).7/ As a result, under current rules, it would likely be impossible for Calling and other FSS systems to provide fixed satellite service to potential customers in areas where LMDS systems are licensed and operating.

III. UNRESTRICTED AUTHORIZATION OF LMDS IN THE 27.5-29.5 GHZ BAND WOULD BE A DE FACTO RECLASSIFICATION OF FSS IN THIS BAND FROM CO-PRIMARY STATUS TO SECONDARY STATUS.

The Commission notes in its Notice that Motorola Satellite Communications, Inc. proposes to operate gateway/control uplinks in the "B-band" (28.5-29.5 GHz) to support its proposed Iridium LEO mobile satellite service, and that the NASA Advanced Communications Technology Satellite

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6/ Because the number of earth stations required for feeder link or gateway functions for a given satellite system is limited, unlike multiple fixed satellite terminals, it may be possible to coordinate the locations of such earth stations with the

("ACTS"), which is scheduled to be launched later this year, will operate with uplinks that are partially in the B-band. See Notice at n.2. While acknowledging these proposed FSS uses in the 28 GHz band, the Commission appears to give short shrift to the rights of future FSS users of the 27.5-29.5 GHz frequencies who have not yet applied for use of the spectrum.8/

Specifically, the Commission requests comment on whether a separate assignment of frequencies is required to accommodate the proposed satellite service applications in the 28 GHz band. See Notice at ¶22. There is no similar consideration given to future satellite use. Indeed, the Commission appears to take the position that only existing and proposed FSS users with pending applications before the FCC should be afforded interference protection from LMDS licensees.

For example, under proposed Section 21.1002, LMDS licensees would be required to coordinate proposed frequency usage with existing users and non-mutually exclusive pending applicants affected by a proposed LMDS system, "including shared satellite services operating on the 28.5-29.5 GHz band." Notice at Appendix B, proposed §22.1002(b). To the extent that the Commission has considered potential interference between LMDS and satellite services, it appears to have only taken into consideration existing proposed uses, and to have proposed

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8/ Instead, the Notice focuses on the Commission's belief that the 28 GHz band is currently being under-utilized for both terrestrial and satellite services, and appears it will continue to be underutilized in the future. See Notice at ¶¶ 3, 5, 14.

regulations that afford "primary" status to a licensed LMDS system vis-a-vis a conflicting proposed satellite use.9/ Since LMDS employs multicell multipoint configurations and is a service that will be licensed in all markets throughout the country, such a regulatory structure would have the practical effect of precluding most future satellite uses of the 27.5-28.5 GHz band

multipoint operations will foreclose acceptable sharing with most FSS uses on the same frequencies, as a new service that does not readily lend itself to sharing with the co-primary allocation of FSS, LMDS systems should be authorized in the 28 GHz band only on a secondary basis to FSS, i.e., LMDS systems would be authorized subject to the condition that such systems (i) not cause interference to any FSS satellite system operating in the Ka-band and (ii) accept interference from FSS earth stations operating in conformance with the Commission's rules.

Since the operating characteristics of LMDS foreclose sharing between FSS and LMDS in the 28 GHz band and given FSS' present co-primary status with fixed terrestrial services under both the U.S. and international allocations, affording LMDS secondary status to FSS is the only reasonable basis for authorizing the new service. Secondary status for LMDS balances the Commission's desire to promote new and innovative uses of the 28 GHz band while assuring that existing, proposed and future FSS uses in the band will not be unwittingly foreclosed.11/

B. The Commission Should Protect Receivers Aboard FSS Satellites By Adopting EIRP Limits For LMDS Transmitters.

In order to protect against harmful interference from LMDS transmissions into receivers aboard FSS satellites, the Commission should adopt strict EIRP limits for all LMDS

11/ Such a regulatory structure strikes a reasonable balance between the competing (and perhaps conflicting) interests of existing, proposed and future FSS users, and the proponents of this new and untested LMDS service.

transmissions directed above 25 degrees above the horizon. Transmissions directed below 25 degrees above the horizon would not be subject to such EIRP limits.12/ This requirement would be similar to EIRP limits currently applicable to satellite earth stations. See 47 C.F.R. §25.204. The imposition of adequate EIRP limits would provide an effective interference criteria to guard against harmful interference by LMDS transmitters into FSS satellites.13/ So long as LMDS licensees meet the EIRP limits, they would not be required to meet any additional coordination or sharing criteria (vis-a-vis FSS systems operating in the Ka-band).

V. ALTERNATIVELY, THE COMMISSION SHOULD ASSURE THAT THERE IS AN ADEQUATE SEPARATE ALLOCATION IN THE 28 GHZ BAND TO ACCOMMODATE EXISTING, PROPOSED AND FUTURE FSS USES.

As previously mentioned, the Commission's Notice requests comment on whether a separate assignment of frequencies is required to accommodate proposed satellite services in the 28 GHz band or whether adequate coordination and sharing criteria can be developed to permit both terrestrial and fixed satellite services to operate compatibly in the band. Notice at ¶22. As discussed above, the multicell multipoint nature of LMDS forecloses developing such coordination and sharing criteria.

12/ Calling does not address whether technical standards for LMDS are required to assure compatibility of LMDS with other terrestrial services.

13/ The EIRP limit should assure that no harmful interference would be caused to a satellite operating at a typical low earth orbit, i.e., 500 km.

Accordingly, if the Commission elects not to make LMDS secondary to FSS in the 27.5-29.5 GHz frequencies, it must provide for a separate assignment of uplink Ka-band spectrum to FSS that is adequate to meet existing, proposed and future FSS uses.

In its Notice, the Commission requested comment on whether frequency assignment schemes other than two 1000 MHz blocks might better meet its objectives.14/ See Notice at ¶21. The Commission should set aside sufficient spectrum in the 27.5-29.5 GHz frequencies for FSS uses that are incompatible with LMDS systems. Calling suggests that 1000 MHz is an appropriate amount of spectrum for such purposes. Thus, the Commission could for example assign two 500 MHz blocks to LMDS which would allow two 25 channel systems in each market. With existing video compression technology, LMDS licensees will be able to increase the number of channels well beyond the number of channels envisioned in the Notice.

FSS system operations that are capable of co-existing with LMDS would also be eligible to apply to use the LMDS frequencies for earth-to-satellite transmissions (i.e., for

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14/ The Commission suggested for example that

> two larger blocks of spectrum, enough to offer about 34 video channels, could each be assigned to new licensees for LMDS video programming services, and two smaller blocks of spectrum could each be assigned to other users, possibly to applicants proposing only telecommunications services of a smaller video system.

Notice at ¶21.

gateway or feeder/control links). The remaining 1000 MHz in the 27.5-29.5 GHz band would be reserved exclusively for FSS uses that are incompatible with LMDS operations.

If the Commission elects to authorize LMDS on a "co-primary" status with FSS, reserving an adequate amount of spectrum for incompatible FSS operations is essential to preserving access by existing, proposed and future FSS uses to the Ka-band where FSS has co-primary status with fixed terrestrial service.

VI. CONCLUSION.

For the reasons fully set forth above, Calling urges the Commission to proceed cautiously in authorizing the proposed LMDS. If the Commission elects to authorize a new LMDS, given LMDS' multicell multipoint configurations, such new service should only be authorized with a secondary status to FSS.

proposed and future FSS uses that are incompatible with LMDS